S/094/61/000/004/002/003
E194/E235

Automatic Control of Current Density on Plating Baths Using Magnetic Amplifiers

causing some saturation of the amplifier and reduction in the impedance of the a.c. windings A-X, and B-Y. The generator field current and output voltage then increase to restore the current density. Thus, the current density is stabilized whatever the number of parts in the bath. The equipment described has been built and the resultant power economy was 220 000 kWh per annum. This work was proposed for a prize in the 16th All Union Competition for Saving of Energy. There are 2 figures.

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Automatic Control of Current Density on Plating Baths Using Magnetic Amplifiers

is connected a selenium rectifier BC2 which supplies the control winding OII of the magnetic amplifier with direct current through the control rheostat P1. The magnetic amplifier has three control windings: OI a positive feed-back winding which causes a large change in load current for a small change in control current. OII a control winding to produce the necessary saturation of the magnetic amplifier core connected in series with winding OI; OIII a control winding connected in the pick-up circuit which demagnetizes the magnetic amplifier as required and which is cross-connected compared with the other two windings. When the generator is connected, the magnetic system of the amplifier is saturated to an amount that depends on the ampere-turns of the first two control windings. Current then flows in the generator field and a certain voltage appears on the generator armature. This voltage further depends on the demagnetizing effect of the winding OIII. When parts are suspended from the cathode the current density on the pick-ups is reduced, thus reducing the demagnetizing ampere-turns,

S/094/61/000/004/002/003
E194/E235

AUTHORS: Mitsovskiy, V. I. and Tobuz, E. N.

TITLE: Automatic Control of Current Density on Plating Baths Using Magnetic Amplifiers

PERIODICAL: Promyshlennaya energetika, 1961, No. 4, pp. 12-13

TEXT: Available methods of controlling the current density in plating baths require a great deal of expensive equipment and are not very reliable. The author has developed and introduced a circuit for current density control in which the main controlling element is a magnetic amplifier of very low inertia. A schematic circuit diagram of the equipment is shown in Fig. 2, which uses the following notation: (1) generator; (2) anode; (3) pick-ups; (4) cathode. The a.c. supply is connected to the transformer Tp_1 which has two secondary windings, to one of which Tp_2 are connected in series the alternating current windings of the magnetic amplifier A-X and B-Y and a selenium rectifier BC1. On the d.c. side of the selenium rectifier BC1 there are connected in series the generator field winding OB and the positive feed-back winding of the magnetic amplifier OI. To secondary winding Tp_3

Card 1/4

MITSOV, Z., prof.

Effect of diets rich in animal proteins on acute radiation sickness in dogs. (Pulse, respiration, temperature, survival). Nauch. tr. vissh. med. inst. Sofia 39 no.7:187-203 '60.

1. Predstavena ot prof. Z. Mitsov. rukovoditel na Katedra "22".

(RADIATION INJURY nutrition & diets)
(PROTEINS nutrition & diets)
(PULSE radiation eff)
(RESPIRATION radiation eff)
(BODY TEMPERATURE radiation eff)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700002-6

MITSOV, Z., prof.

Pulse, respiration, temperature, weight and behavior changes in acute radiation sickness in dogs treated with cysteine or with sour milk diets. Nauch. tr. vissh. med. inst. Sofia 39 no.7:103-113 '60.

1. Predstavena ot prof. Z. Mitsov, rukovoditel na Katedra "22".

(RADIATION INJURY exper) (PULSE radiation eff)
(RESPIRATION radiation eff)
(BODY TEMPERATURE radiation eff)
(BODY WEIGHT radiation eff)
(CYSTEINE pharmacol)
(MILK nutrition & diets)

MITSOV, Z., prof.

Early pulse, respiration, temperature, and behavior changes in acute radiation sickness in dogs fed normal diets. Nauch. tr. vissh. med. inst. Sofia 39 no.7:29-42 '60.

1. Predstavena ot prof. Z. Mitsov, rukovoditel na Katedra "22".

(RADIATION INJURY exper) (PULSE radiation eff)
(RESPIRATION radiation eff)
(BODY TEMPERATURE radiation eff)

MITSOV, Z., prof.

On the problem of nutrition in acute radiation sickness. Nauch. tr. vissh. med. inst. Sofia 39 no.7:1-12 '60.

1. Predstavena ot prof. Z. Mitsov, rukovoditel na Katedra "22".

(RADIATION INJURY nutrition & diet)

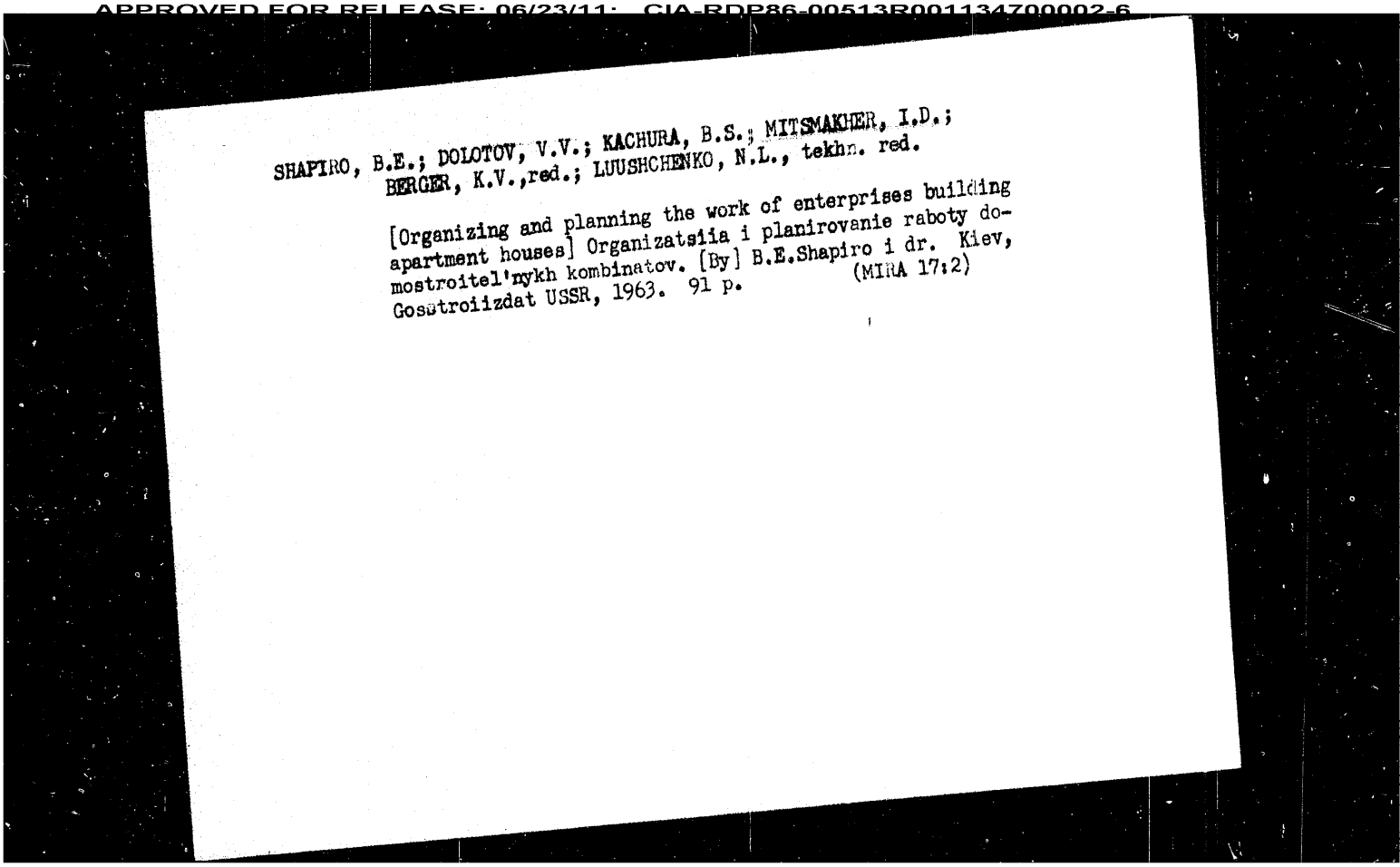
TREBOGANOV, A.D.; MITSNER, B.I.; ZINKEVICH, E.P.; KRAYEVSKIY, A.A.; PREOBRAZHENSKIY, N.A.

Macrocyclic compounds. Part 1: Synthesis of cyclooctane and cyclododecane. Zhur. org. khim. 1 no.9:1583-1586 S '65. (MIRA 18:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova. Submitted July 2, 1964.

KURBANOV, V., inzh.; MITSNEFES, I., inzh.

Unit for preparing and transporting lightweight concrete. (MIRA 11:5)
Stroitel' no.4:4-6 Ap '58.
(Mixing machinery) (Lightweight concrete)



SHAPIRO, B.E.; DOLOTOV, V.V.; KACHURA, B.S.; MITSMAKHER, I.D.; BERGER, K.V.,red.; LUUSHCHENKO, N.L., tekhn. red.

[Organizing and planning the work of enterprises building apartment houses] Organizatsiia i planirovanie raboty domostroitel'nykh kombinatov. [By] B.E.Shapiro i dr. Kiev, Gosstroiizdat USSR, 1963. 91 p. (MIRA 17:2)

MATULIS, Yu. Yu. [Matulis, J.]; MIKSHAS, M.A. [Mikšas, M.]

Theory of chromium plating and its application to tetrachromate electrolytes. Trudy AN Lit. SSR. Ser. B. no.1:57-72 '64.
(MIRA 17:7)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

MITSKUS, M.A. [Mickus, M.]; MATULIS, Yu.Yu. [Matulis, J.]

Cathodic reduction of chromic acid on a carbon electrode. Trudy AN Lit. SSR Ser. B no.3:31-37 '62.

(MIRA 18:3)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700002-6

ACCESSION NR: AP4031107

SUBMITTED: 06May63	DATE ACQ: 29Apr64	ENCL: 00
SUB CODE: GC	NO REF SOV: 016	OTHER: 006

Card 3/3

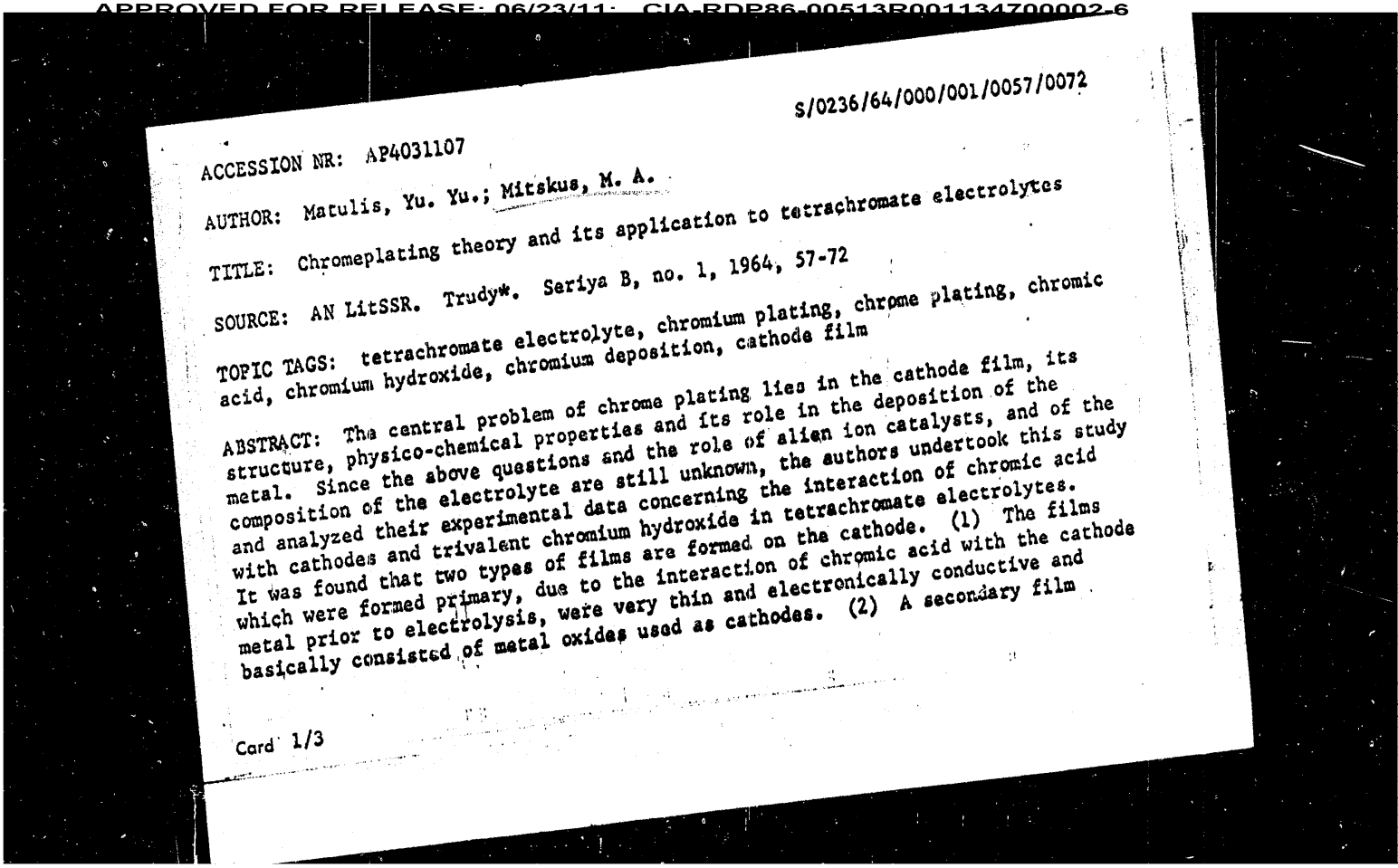
APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700002-6

ACCESSION NR: AP4031107

developed on the cathode when hydrogen began to form, which remained stationary during the normal chromium deposition process. The secondary film was a thousand times thicker than the primary film and consisted of trivalent chromium hydroxide, chromic acid anions and foreign anions from the catalyst. The secondary film is not only the regulator of the electrochemical reaction of chromium deposition but also the medium where extremely complex physico-chemical processes of metal deposition take place. There is no difference in principle between the conventional and the tetrachromate electrolytes of which the latter may be considered as an usual chromic acid solution where a portion of the equivalents is neutralized by sodium hydroxide and has a hightened buffing capacity. However, chromium deposited from them is softer and more malleable. With the only exception of brilliant surfaces it is as brittle as conventionally plated chromium. Orig. art. has: 6 figures, 7 formulas, no tables.

ASSOCIATION: Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR (Institute of Chemistry and Chemical Engineering, AN Lithuanian SSR)

Card 2/3



S/0236/64/000/001/0057/0072

ACCESSION NR: AP4031107

AUTHOR: Matulis, Yu. Yu.; Mitskus, M. A.

TITLE: Chromeplating theory and its application to tetrachromate electrolytes

SOURCE: AN LitSSR. Trudy*. Seriya B, no. 1, 1964, 57-72

TOPIC TAGS: tetrachromate electrolyte, chromium plating, chrome plating, chromic acid, chromium hydroxide, chromium deposition, cathode film

ABSTRACT: The central problem of chrome plating lies in the cathode film, its structure, physico-chemical properties and its role in the deposition of the metal. Since the above questions and the role of alien ion catalysts, and of the composition of the electrolyte are still unknown, the authors undertook this study and analyzed their experimental data concerning the interaction of chromic acid with cathodes and trivalent chromium hydroxide in tetrachromate electrolytes. It was found that two types of films are formed on the cathode. (1) The films which were formed primary, due to the interaction of chromic acid with the cathode metal prior to electrolysis, were very thin and electronically conductive and basically consisted of metal oxides used as cathodes. (2) A secondary film

Card 1/3

MATULIS, Yu. Yu.[Matulis, J.]; MITSKUS, M. A.[Mickus, M.]; RAMANAUSKENE, D. K. [Ramanauskiene, D.]

Mechanism of processes occurring in the electroreduction of chromic acid. Liet ak darbai no.3:141-167 '61.

1. Institut khimii i khimicheskoy tekhnologii Akademii nauk Litovskoy SSR.

Some problems of practical chrome-plating

S/123/62/000/020/006/007
A006/A101

20 - 90 amp/dm^2 hard coatings are produced. Tetrachromate electrolytes, obtained by the addition of caustic soda to a "sulfate" chrome-plating electrolyte, assure the production of deposits with up to 33% chromium current efficiency and 350 - 400 kg/mm^2 hardness. The coatings are mat-finish (but can be well polished to shining luster) and, almost poreless; this makes it possible to produce protective-decorative coatings without copper and nickel underlayers.

L. Kamionskiy

[Abstracter's note: Complete translation]

Card 2/2

S/123/62/000/020/006/007
A006/A101

AUTHOR: Mitskus, M. A.

TITLE: Some problems of practical chrome-plating

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 20, 1962, 43, abstract 20B267 (In collection: "Vopr. usoversh. gal'vanopokrytiy", Vil'nyus, 1961, 48 - 54)

TEXT: Information is given on the composition of solutions and processing conditions for decorative and hard chrome-plating in conventional "sulfate", self-regulating, and tetrachromate electrolytes. The self-regulating electrolytes contain in g/l 250 - 300 CrO_3, 6 - 7 $SrSO_4$ and 18 - 20 K_2SiF_6, and maintain automatically a constant concentration of SO_4^{2-} and $SiF_6^{2-} \rightarrow SiF_6^{2-}$ anions in the solution; they do not require any control and are characterized by higher current efficiency of chromium (which makes it possible to accelerate by almost twice the chrome-plating process), better throwing power, and low sensitivity to contamination by iron ions. In this electrolyte at 40°C and 5 - 20 amp/dm^2 current density, decorative chromium deposits are obtained, and at 50 - 55°C and

Card 1/2

RIMDZHYUTE, D.K. [Rimdziute, D.]; MITSKUS, M.A. [Mickus, M.]; MATULIS, Yu.Yu. [Matulis, Juozas]

Composition and some properties of cathode films forming in the electrolysis of the solutions of chromic acid. Liet ak darbai B no.4:91-102 '59. (EEAI 9:3)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.
(Chromic acid) (Electrolysis)
(Cathodes)

SOV/137-58-10-21362

On the Problem of Electrolytic Deposition

revolution of K and in the concentration of SO_4^{2-} anions in the solution displace the polarization curves in the same direction. Bibliography: 17 references.

A. P.

1. Chromium--Electrodeposition 2. Chromic acid--Applications
3. Cathodes--Performance

Card 2/2

SOV/137-58-10-21362

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 130 (USSR)

AUTHORS: Matulis, Yu. Yu., Mitskus, M. A.

TITLE: On the Problem of Electrolytic Deposition of Chromium From Chromic Acid on Revolving Cathodes (K voprosu elektroosazhdeniya khroma iz rastvorov khromovoy kisloty na vrashchayu shchikhsya katodakh)

PERIODICAL: Tr. AN LitSSR, 1958, Vol B1(13), pp 39-53

ABSTRACT: A study of polarization phenomena occurring on Cu cathodes (C) during the electrolysis of CrO_3. A Pt plate was used as the anode. The interdependence of the processes of discharge of the H^+ ions and that of deposition of Cr was investigated. The character of the variations of the cathode potential in relation to the composition of the electrolyte, the ratio of the concentrations of CrO_3 and H_2SO_4 in the solution and the speed of revolution of the C was studied. It is established that metallic Cr is deposited on revolving C under considerably greater cathode cd's than on stationary C. The threshold value of the cathode cd at which the deposition of Cr begins is directly proportional to the speed of revolution of C. An increase in the speed of

Card 1/2

Formation of Trivalent (cont.)

increases with an increase in cathode cd, with a drop in temperature, and with an increase in the concentration of H_2SO_4, HF, HCl, or HNO_3 in the electrolyte. For each cathode cd there is a corresponding threshold concentration of each added acid, beyond which the current efficiency of Cr^{3+} ions attains almost 100%; this is related to the appreciable changes in the cathode polarization attending an increase in the amount of additions of extraneous contaminating acids or their anions. The rate of oxidation of Cr^{3+} is measurable on Pb anodes only. There is virtually no observable oxidation of Cr^{3+} on Pt steel, and Fe anodes at temperatures between 30 and 50° and anode cd between 6.6 and 25.6 amp/dm^2. The rate of oxidation on the anode grows with increasing initial concentration of Cr^{3+} in the solution, temperature, and (anode) cd. The rate of reaction and anode cd are not proportional to one another, which leads to the conclusion that the oxidation of Cr^{3+} on the anode is not a purely electrochemical process. From a comparison of the rate of formation of Cr^{3+} ions on the cathode with the rate of their oxidation on the anode it was calculated that about 10-15% of the electricity spent on chrome plating is used for the Cr^{3+} cycle. For preserving a steady-state concentration of ~1 g/liter in a constantly working bath at 50° it is necessary to keep the ratio between the surfaces of the cathode and Pb-anode at a ratio of 1 : 2.

Card 2/2 1. Chromium plating--Electrochemistry 2. Chromium ions--Properties

L.A

137-58-6-12942

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 251 (USSR)

AUTHORS: Matulis, Yu.Yu., Mitskus, M.A.

TITLE: Formation of Trivalent Chromium Ions, and Their Role in the Process of Chrome Plating (Obrazovaniye trekhvalentnykh ionov khroma i ikh rol' v protsesse khromirovaniya)

PERIODICAL: V sb.: Teoriya i praktika elektrolit. khromirovaniya. Moscow, AN SSSR, 1957, pp 31-43

ABSTRACT: The rate of formation of Cr^{3+} on the cathode in a 240 g/liter CrO_3 solution with additions of H_2SO_4, HF, HCl, HNO_3, and H_3PO_4 was measured for cathode cd between 6.6 and 25.6 amp/dm^2 and at temperatures between 30 and 70°C. The rate of oxidation of Cr^{3+} on the anode in relation to the temperature, the cathode cd, the nature of the anode, and the initial concentration of Cr^{3+} in the solution was determined. It was established that the necessary condition for the formation of perceptible quantities of Cr^{3+} ions on the cathode is the presence of a minimum quantity of mineral acids or of their anions (excluding H_3PO_4). The rate of reduction of Cr^{6+} to Cr^{3+}

Card 1/2

Theory and Practice (Cont.)

AVAILABLE: Library of Congress

TM/gmp
5-4-59

Card 4/4

Theory and Practice (Cont.)

Theory and Practice (Cont.)
to the more essential problems in this field.

TABLE OF CONTENTS:

MITSKUS, M.A.

25(0) PHASE I BOOK EXPLOITATION SOV/1389

Akademiya nauk SSSR. Institut fizicheskoy khimii

Teoriya i praktika elektroliticheskogo khromirovaniya (Theory and Practice of Electrolytic Chromium Plating) Moscow, Izd-vo AN SSSR, 1957.
231 p. 5,000 copies printed.

Resp. Eds.: Vagramyan, A.T., Professor, N.T. Kudryavtsev, Professor, and M.A. Shluger, Candidate of Technical Sciences; Ed. of Publishing House: Yegorov, N.G.; Tech. Ed.: Pavlovskiy, A.A.

PURPOSE: This book is for engineers, industrial workers, members of scientific research institutions and teachers concerned with modern methods of electroplating and the manfacture of corrosion-resistant metallic instruments.

COVERAGE: The collection contains sixteen reports and the texts of several discussions presented before the March 1955 Conference on the Theory and Practice of Chromium Plating, sponsored jointly by the Institute of Physical Chemistry, AS USSR, and the Moscow Scientific, Engineering and Technical Society for Instrument Making. The reports reflect the conference's aim of a wide exchange of opinion on problems of chromium electrodeposition and offer solutions

Card 1/ 4

"ITSKUS, M.A.

Mitskus, M. -- "The Kinetics of Tri-Valent Ions of Chromium in the Process of Chrome-Plating." Acad Sci Lithuanian SSR. Inst of Chemistry and Chemical Technology. Vil'nyus, 1956. (Dissertation for the Degree of Candidate in Chemical Science)

So: Knizhnaya Letopis', No 12, 1956

MITSKOVSKI, Josif.

Yugoslavia/Plant Disease. Diseases of Cultivated Plants 8-3

Abs Jour : Ref Zhur-Biol., No 8, 1958, 34974

Author : Mitskovski Josif
Inst : Not given
Title : Powdery Smut of Tobacco and its Control. (muchnistaya rosa tobaka i bor'ba s ney).

Orig Pub : Tutun, 1957, 7, No3, 97-111

Abstract : The symptoms of tobacco disease widely prevalent in Yugoslavian Macedonia are described. Karathane is highly effective in the control of the disease.

Card 1/1

MITS'KO, L.

You shouldn't trust quacks. Rab. i sial. 39 no.8:18 Ag '63. (MIRA 16:9)

MITSKIS, R.M. [Mickis, R.], kand.sel'skokhoz.nauk (Vil'nyus)

Effectiveness of the reinforcement of irrigation canals in the Lithuanian S.S.R. Gidr. i mel. 15 no.4:30-37 Ap '63. (MIRA 16:5)
(Lithuania--Irrigation canals and flumes)

MITSKIS, R., Cand Agr Sci -- (diss) "Effectiveness of 'mole' drainage on peaty soils under the conditions of Lithuanian SSR." Kaunas, 1957. 19 pp (Min Agr USSR, Lithuanian Agr Acad), 130 copies (KL, 1-58, 120)

L 27[illegible]-66

SOURCE CODE: UR/0239/65/051/007/0893/0895

ACC NR: AP5[illegible]517

43
B

AUTHOR: Mi[illegible]is, A. M.

ORG: Laboratory of electroencephalography, Medical Institute, Kaunas (Laboratoriya elektroentsefalografii Meditsinskogo instituta)

TITLE: Combination of a wave meter with an integrator for simultaneous evaluation of quantitative wave patterns and of the mean amplitude of brain potentials

SOURCE: Fiziologicheskiy zhurnal SSSR, v.51, no.7, 1965, 893-895

TOPIC TAGS: electroencephalography, brain, bioelectric phenomenon, rabbit, electronic equipment

ABSTRACT: A combined wave meter and integrator for electroencephalographic studies is proposed which records simultaneously as a function of time the number of waves within a set period and the mean amplitude of these waves. On the basis of the two recorded curves, relations between amplitude and frequency can be studied. Application of the instrument is illustrated on the example of a study of brain biocurrents of a rabbit to which thiopental had been administered. Before the new instrument was designed, the frequency had been determined by a visual count of the number of waves, and the mean amplitude, by planimetry of EEG curves. The author thanks laboratory coworkers K. Grinyavichyus, A. Gutman and A. Stasyunas for their valuable advice and technical aid. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 06,09/ SUBM DATE: 10Jan64/ ORIG REF: 002/ OTH REF: 002

Card 1/1

UDC: 612.822.03.08

L 29214-66

ACC NR: AP6019077 SOURCE CODE: UR/0239/65/051/005/0544/0546

AUTHOR: Mitskene, V. P.; Mitskis, A. M.

ORG: Laboratory of Electroencephalography, Medical Institute, Kaunas (Laboratoriya elektroentsefalografii Meditsinskogo instituta)

TITLE: Differences in the effects of amphetamine and eserine on the electrocorticogram of rabbits

SOURCE: Fiziologicheskiy zhurnal SSSR, v. 51, no. 5, 1965, 544-546

TOPIC TAGS: pharmacology, EEG, rabbit, bioelectric phenomenon, cerebral cortex, neurophysiology

ABSTRACT: In experiments with rabbits, the effect of amphetamine (5 mg/kg) on the bioelectric activity of the cerebral cortex depended on the initial background of this activity. Against the background of slow activity, this drug produced a pronounced desynchronization: the median amplitude of the electrocorticogram decreased, while the number of waves increased. Against a background of desynchronization, amphetamine reduced the number of waves and increased to a small extent their mean amplitude. Eserine (0.3 mg/kg), on the other hand, increased the number of waves in either case, while its effects on the amplitude were similar to those of amphetamine. The difference in the action of the two drugs, which apparently affect the mechanism of desynchronization centered in the reticular formation, is presumably related to the fact that amphetamine acts directly on synaptic transmission in the same manner as noradrenaline, while eserine acts as a cholinesterase inhibitor, producing an endogenic accumulation of acetylcholine. It is assumed that the reticulo-cortical system which brings about desynchronization has both an adrenergic and cholinergic link. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 06 / SUBM DATE: 13Jan64 / ORIG REF: 002 / OTH REF: 013

Card 1/1 UDC: 612.822.3

YANUSHKYAVICHUS, Z.I., prof. [Jamuškevičius, Z.I.]; VITENSHTEYNAS, G.A. [Vitenšteinas, G.A.]; MITSKIS, A.M. [Mickis, A.M.], kandmed.nauk (Kaunas)

A case of so-called visceral epilepsy simulating acute abdomen. (MIRA 12:12)
Klin.med. 37 no.9:146-147 S '59.

1. Iz kafedry gospital'noy terapii (zav. - prof. Z.I. Yanushkyavichus) i kabineta elektroentsefalografii (zav. - dotsent A.M. Mitskis) Kaunasskogo meditsinskogo instituta.
(ABDOMEN, ACUTE diagnosis)
(EPILEPSY, pathology)

MITSKIS, A.M.

Diagrammatic presentation of mean voltage and frequency in electroencephalogram analysis. Fiziol.zhur. 44 no.4:384-385 Ap '58. (MIRA 11:4)

1. Kafedra farmakologii Meditsinskogo instituta, Kaunas.
(ELECTROENCEPHALOGRAPHY,
voltage & frequency in EEG analysis (Rus))

SENTYURIN, B.S., professor; PRAVDIN, N.S. professor: MOZGOV, Ye.I., professor; ZAKUTINSKIY, D.I., professor; SANOTSKIY, V.A., professor; DOZORTSEVA, P.M.; NANAYEVA, M.T.; MITSKIS, A.M.; SAMOYLOVA, Z.T.

Pharmacology and Toxicology Section of the Moscow Society of Physiologists, Biochemists and Pharmacologists. Farm.i toks. 16 no.2:54-56 Mr-Ap '53. (MLRA 6:6)

1. VNIKhFI (for Dozortseva). 2. Moskovskaya veterinarnaya akademiya (for Mozgov). 3. Sektsiya farmakologii i toksikologii Moskovskogo obshchestva fiziologov, biokhimikov i farmakologov.
(Pharmacology--Societies) (Physiology--Societies) (Biochemistry--Societies)

MITSKIEVIC, N. V.

On the transformational properties of some physical quantities in the general theory of relativity. Doklady BAN 14 no.5:439-442 '61.

1. Predstavleno akad. Khr. Khristovym.

(Relativity(Physics))

POTIYEVSKAYA, Sof'ya Arkad'yevna; MOSHCHINSKAYA, Nina Konstantinovna; MITSKEVICH, Z.A., kand. khim. nauk, retsenzent;

[Carbamide resins using furfurole and its derivatives] Karbamidnye smoly s primeneniem furfurola i ego proizvodnykh. Kiev, Tekhnika, 1964. 83 p. (MIRA 18:1)

SAL'NIKOV, Georgiy Pavlovich, inzh.; DIDKOVSKIY, P.V., inzh., retsenzent; DONDIK, I.G., inzh., retsenzent; ZAKHARENKO, I.P., kand. tekhn. nauk, retsenzent; ZEYGERMAKHER, R.S., inzh., retsenzent; KAMENICHNYY, I.S., inzh., retsenzent; MITSKEVICH, Z.A., kand. khim. nauk, retsenzent; NEVSKIY, B.N., inzh., retsenzent; RADOMYSEL'SKIY, I.D., kand. tekhn. nauk, retsenzent; CHEKURNA, M.G., inzh., red.izd-va; SHAFETA, S.M., tekhn. red.

[Brief handbook for mechanical engineers] Kratkii spravochnik mashinostroitelia. Kiev, Gostekhizdat USSR, 1963. 542 p. (MIRA 17:2)

MEN', S.M., inzh.; MITSKEVICH, Z.A., inzh.

Use of polyvinyl chloride dispersions for the manufacture of consumers' goods. Trudy NIIMeshtopproma no.17:3-13 '62. (MIRA 16:5)

(Vinyl polymers) (Russia—Manufactures)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700002-6

Investigating internal energy ...

occurs in couplings and joints. There are 12 figures, 1 table and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: A.W. Cochardt, Internal Damping of Machine Members, Jour. of Applied Mechanics, v. 21, no. 3, (1954).

ASSOCIATION: MVTU im. N.E. Baumana (MVTU im. N.E. Bauman)

SUBMITTED: January 21, 1961

Card 4/7

Investigating internal energy ...

element. Thus, the coefficient of absorption is

$$\psi = \frac{2\pi^2 \, ER^3 \delta \, M_0}{l_0 (P_1 a + P_1 a_1)^2} \qquad (5)$$

Fig. 8 illustrates another improvement which eliminates friction from the measurement of M_0. Compensation for friction is achieved by rotating the outer race of one of the two identical bearings (chosen by selection) at double the speed of the specimen. Results of tests by this method are given in tabulated form. The effect of time of testing on aluminum at $\sigma = 460$ kg/cm^2 is shown in Fig. 10 (the interval of 30 min. corresponded to about 5000 cycles). On resting the specimen for a few days the ability to dissipate energy was partly recovered. Dissipation of energy with a small flanged coupling in the middle was 3 times higher for the same specimen. In any construction maximum absorption of energy

Card 3/7

Investigating internal energy ...

where $\Delta\Pi$ - dissipated energy, Π - elastic energy at maximum stress. The cyclic bending stress in the tube material will be

$$\sigma = \frac{M_b \cos \omega t}{2\pi R^2 \delta} \qquad (3)$$

where ω is the angular speed and δ the wall thickness of the tube. When the specimen rotates, its plane of deflection moves a small distance e from the original plane and the moment of internal friction is equal to 2Pe. For the working part of the specimen, $l_0 = l_1 - l_2$ (see Fig. 7), this moment is in practice given by

$$M_1 - M_2 = M_0$$

where M_1 and M_2 are measured by the angle of twist of an elastic

Card 2/7

29218

24.4200 1191, 1327

S/145/61/000/006/004/007
D203/D305

AUTHOR: Mitskevich, Z.A., Assistant

TITLE: Investigating internal energy absorption in metals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 6, 1961, 90-98

TEXT: Internal losses, within the elastic limit, depend on the maximum stress, the law of loading and unloading and the material properties. Estimation of internal friction by a damping coefficient of natural vibration is inadequate because the amplitude is variable. The author's method is based on measuring the dissipation of energy in a thin-walled rotating tube under pure bending of constant magnitude. The principle and the apparatus are shown. The coefficient of absorption is

$$\psi = \frac{\Delta \Pi}{\Pi} \qquad (1)$$

Card 1/7

S/653/61/000/000/051/051
I042/I242

AUTHORS: Mitskevich, Z.A., Potiyevskaya, S.A., and Goronovskaya, S.S.

TITLE: Dielectric properties, areas of application, and processing methods of plastics

SOURCE: Plastmassy v mashinostroyenii i priborostroyenii. Pervaya resp. nauch.-tekh. konfer. po vopr. prim. plastmass v mashinostr. i priborostr., Kiev, 1959. Kiev, Gostekhizdat, 1961, 554- 571

TEXT: The following properties and characteristics of USSR plastics are listed: specific surface electrical resistance, specific volumetric electrical resistance, tangent of the angle of dielectric losses, dielectric strength, dielectric constant, processing methods, specific molding pressure, molding temperature, molding time, settling on molding, viscosity, areas of application.

Card 1/1

S/653/61/000/000/050/051
I042/I242

AUTHORS: Mitskevich, Z.A., Potiyevskaya, S.A., and Goronovskaya, S.S.

TITLE: Physicomechanical properties of plastics

SOURCE: Plastmassy v mashinostroyenii i priborostroyenii. Pervaya resp. nauch.-tekh. konfer. po vopr. prim. plastmass v mashinostr. i priborostr., Kiev, 1959. Kiev, Gostekhizdat, 1961, 546-554

TEXT: The following properties of USSR plastics are listed: specific weight, heat resistance, coefficient of linear expansion, coefficient of heat conductivity, tensile strength, compression, tensile elastic modulus, specific resilience, hardness, water absorption, frost resistance.

Card 1/1

S/653/61/000/000/035/051
I007/I207

Dependence of physicomechanical properties....

acteristics of the starting material are outlined, the effect of processing methods on the properties of the plastics is studied, the influence of machining methods on the properties of the plastics-made components is considered and the wear resistance of caprone is investigated. As was found, caprone may be used for the manufature of machine elements operating under friction with liquid lubrication (without lubrication) does not exceed 35 kg/cm^2. The properties of caprone are enhanced by suitable heat treatment (particularly by infra-red radiations). For the use of caprone in the food industry, its low-molecular components have to be preliminarily extracted by methods outlinedin this paper. There are 14 figures and 8 tables.

Card 2/2

43777

S/653/61/000/000/035/051
I007/I207

AUTHORS: Mitskevich, Z.A., Shagiyan, V.F., and Kokhno, Yu.A.

TITLE: Dependence of physicomechanical properties of caprone components on processing methods

SOURCE: Plastmassy v mashinostroyenii i priborostroyenii. Pervaya resp. nauch.-tekh. konfer. po vopr. prim. plastmass v mashinostr. i priborostr., Kiev, 1959. Kiev, Gostekhizdat, 1961, 376-394

TEXT: Despite the ever-increasing use of polycaprolactame (caprone) in machine building for the manufacture of a great variety of components, the technological processes of their production still need certain improvements in order to obtain components of stable properties. This is a detailed report of experimental investigations on the physicomechanical properties of caprone, and on the study of sanitary properties of ready caprone products. The char-

Card 1/2

BELYANKIN, F.P., otv. red.; BEZUGLYY, V.D., red.; GROZIN, B.D., red.; DRAYGOR, D.A., red.; GURARIY, M.G., red.; LOGAK, N.S., red.; MITSKEVICH, Z.A., red.; PESIN, L.M., red.; RYBCHEVSKIY, Yu.S., red.; CHERNENKO, L.D., red.; YATSENKO, V.F., red.; KUDRYAVTSEV, G., red.; LUPANDIN, I., red.; SHAFETA, S., tekhn. red.

[Use of plastics in the manufacture of machinery and instruments] Plastmassy v mashinostroenii i priborostroenii. Kiev, Gos. izd-vo tekhn. lit-ry USSR, 1961. 573 p. (MIRA 14:12)
(Plastics) (Machinery industry) (Instrument manufacture)

MITSKEVICH, Zoya Akhmudtanovna; ISLANKINA, T.F., red.; ATROSHCHENKO, L.Ye., tekhn.red.

[Machine parts made of capron; experience of several enterprises of the Ukrainian S.S.R. in using capron in the manufacture of machinery] Detali mashin iz kaprona; opyt riada predpriiatii USSR po primeneniiu kaprona v mashinostroenii. Moskva, Izd-vo "Znanie," 1961. 28 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.4, Tekhnika, no.4) (MIRA 14:2)

(Ukraine--Machinery industry) (Ukraine--Nylon)

The dependence ...

S/123/61/000/024/001/016
A004/A101

a lower friction coefficient and wear. The authors present the demands on the raw material and the optimum manufacturing conditions of caprone parts by casting.

[Abstracter's note: Complete translation]

Card 2/2

S/123/61/000/024/001/015
A004/A101

AUTHORS: Mitskevich, Z.A., Shagiyan, V.F., Kokhno, Yu.A.

TITLE: The dependence of the physical-mechanical characteristics of caprone parts on the processing methods

PERIODICAL: Referativnyy zhurnal. Mashinostroyeniye, no. 24, 1961, 25, abstract 24A167 ("Tr. n.-i. in-ta mestn. i toplivn. prom-sti", 1960, no. 15, 3 - 24)

TEXT: The authors studied the dependence of the physical-mechanical characteristics of caprone parts on the processing methods and established the possibility of using caprone for food machine parts. Caprone can be used for the manufacture of parts operating in friction units with consistent and liquid lubricants. The friction coefficient and wear of caprone parts on steel with lubrication is considerably lower than the friction coefficient and wear of nonferrous metals. The load limit on caprone parts without lubrication does not exceed 35 kg/cm^2. Heat treatment of caprone parts by holding at high temperatures in oil or paraffin ensures a stable crystalline structure which possesses

Card 1/2

A new method of determining ... 24597 S/137/61/000/005/054/060
A006/A106

purpose composite specimens were manufactured, joined by flanges, rivets and by pressing. The variety of data obtained on the installation was ± 25%.

I. N.

[Abstracter's note: Complete translation]

Card 2/2

S/137/61/000/005/054/060
A006/A106

24597

18820D

AUTHOR: Mitskevich, Z. A.

TITLE: A new method of determining the characteristics of internal friction

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 5, 1961, 49-50, abstract 51374 ("Tr. Nauchno-tekhn. soveshchaniya po dempfirovaniyu kolebaniy, 1958". Kiyev, AN USSR, 1960, 93-96)

TEXT: The author describes a new method, developed at MVTU imeni Bauman, and an installation for determining internal friction by measuring the magnitude of dispersed energy during the rotation of a thin rod in the state of plain bending. The method proposed for loading the specimen makes it possible to carry out tests of the material under conditions of uniform symmetrical cycles, to vary the value σ_{max}, and to exclude losses in the fastening assemblies of the specimen. Results are given of determining internal friction of 20 grade steel, aluminum and brass. The dependence of internal friction on the stress and number of changes of the cycle per unit of time was investigated. It was established that the dispersed energy in a unit of the material volume increased with higher stresses. The internal friction of simple fastening assemblies was studied. For this

Card 1/2

PHASE I BOOK EXPLOITATION SOV/5303

Nauchno-tekhnicheskoye soveshchaniye po dempfirovaniyu kolebaniy. Kiyev, 1958.

Trudy Nauchno-tekhnicheskogo soveshchaniya po dempfirovaniyu kolebaniy, 17 - 19 dekabrya 1958 g. (Transactions of the Scientific and Technical Conference on the Damping of Vibrations, Held 17 - 19 December, 1958) Kiyev, Izd-vo AN UkrSSR, 1960. 178 p. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut metallokeramiki i spetsial'nykh splavov.

Editorial Board: I. N. Frantsevich, G. S. Pisarenko (Resp. Ed.), G. V. Samsonov, V. V. Grigor'yeva, and A. P. Yakovlev; Ed. of Publishing House: I. V. Kisina; Tech. Ed.: A. A. Matveychuk.

COVERAGE: The book contains 27 articles dealing with principal results of theoretical and experimental investigations of energy dissipation in mechanical vibrations carried out in the Soviet Union from 1956 to 1958. Problems of energy dissipation in materials and factors affecting it are discussed. Purportedly new methods of experimental investigation of damping of vibrations are presented. Attention is given to the recently developed nonlinear theory of calculating vibrations in elastic systems, taking energy dissipation into account. Attempts to analyze internal energy dissipation in materials using methods of mathematical statistics are discussed. Some articles deal with engineering problems in dynamics, in which damping is claimed to play a highly substantial part. Aspirant N. I. Mukhin, of the Kiyev Polytechnic Institute, is mentioned. References accompany some of the articles.

SOV/5303

Card 5/7

CHIKALOV, G.P.; ROYTMAN, Z.L.; LEVITSKIY, Sh.A.; MUCHNIK, F.E.; MITSKEVICH, Z.A.; SHAPIRO, A., otv. za vypusk

[Manufacturing motor-vehicle parts of capron]Izgotovlenie detalei avtomobilia iz kaprona. Kiev, Nauchno-issl. in-t mestnoi i toplivoi promyshl., 1959. 45 p. (MIRA 16:1)
(Nylon) (Motor vehicles—Design and construction)

Polymers and Their Use In Industry SOV/3310

AVAILABLE: Library of Congress

Card 3/3

TM/gmp
2-19-60

mentioned. There are no references.

TABLE OF CONTENTS:

MITSKEVICH, Z. A.

15(8) PHASE I BOOK EXPLOITATION SOV/3310

Mitskevych, Zoya Aleksandrovna

Polimerni materialy ta ikh zastosuvannya v tekhnitsi (Polymers and Their Use In Industry) Kyyiv, 1959. 29 p. (Series: Tovarystvo dlya poshyrennya politychnykh i naukovykh znan' Ukrayins'koyi RSR. Ser. 7, no. 10)

Ed.: E.F. Blashchuk; Ed. of Publishing House: I.H. Merzlikin.

PURPOSE: This pamphlet on the production and use of polymers in the Soviet Union is intended for the general reader.

COVERAGE: This pamphlet deals with the development and use of polymers in Soviet industry, construction, and agriculture. It describes the basic production processes for polymers and lists coke oven gas, coal tar, petroleum, natural gas, and vegetation as the basic raw materials for petrochemical manufacture. It is stated that by the end of the Seven-Year Plan the output of synthetic fiber will increase fourfold, that of plastics, more than sevenfold, and that of synthetic rubber, 3.5-fold. No personalities are

Card 1/3

MITSKEVICH, Z.A.; PIROGOVA, V.T.; LEVITAS, Ye.L.; SHAPIRO, A.I., otv. za vypusk

[Plastics from polyamide resins; review of domestic and foreign literature] Plasticheskie massy na osnove poliamidnykh smol; obzor otechestvennoi i zarubezhnoi literatury. Kiev, Nauchno-issl. in-t mestnoi i toplivnoi promyshl. "Nilmesttopprom," 1958. 36 p. (MIRA 12:2)

(Amides)

Mitskevich, Z. A.

USSR/ Chemistry - Glass mirrors

Card 1/1 Pub. 104 - 11/14

Authors : Dorokhov, A. K.; Mitskevich, Z. A.; and Brilliant, O. A.

Title : New method of silver coating glass

Periodical : Stek. i Ker. 11/11, 25-27, Nov 1954

Abstract : Experiments are described which were conducted in order to discover methods of diminishing the amount of silver left in the solution when silver is being deposited on glass from complex ammonium compounds. It [illegible] found that the addition of iodine to the solution accomplishes this purpose and also fixes the coating of silver more firmly on the glass. Four USSR references (1938 and 1950). Graphs; table.

Institution : .....

Submitted : .....

MITSKEVICH, Yu.G.; LIMAROV, V.T.

Transfer functions of continuous chemical processes in reactors for complete mixing. Avtom. proizv. no.4:49-67 '64.

Using the method of self-compensation of perturbations in the automation of production processes. Avtom. proizv. no.4: 107-117 '64. (MIRA 18:3)

MIISKEVICH, Yu.G.

Control and regulation of the pH value in production processes.
Avtom. proizv. no.4:22-28 '64. (MIRA 18:3)

MITSKEVICH, V.Yu.

Elaphostrongylus rangiferi n.sp., a new helminth of deer. Trudy Inst.zool.AN Kazakh.SSR 12:115-119 '60. (MIRA 13:7)

(Kola Peninsula--Nematoda)
(Parasites--Reindeer)

PROTASOV, A.I., dotsent; SINEV, A.V., prof.; SMIRNOV, A.M., dotsent; BAZHENOV, A.M., dotsent; VIL'NER, A.M., prof.; BASHMURIN, A.F., dotsent; SHAKALOV, K.I., prof.; VELLER, A.A., prof.; NIKANOROV, V.A., prof.; FEDOTOV, V.P., dotsent; KUZNETSOV, G.S., prof.; BOCHAROV, I.A., prof.; SHCHERBATYKH, P.Ya., prof.; TSION, R.A., prof.; GRIBANOVSKAYA, Ye.Ya., dotsent; ADAMANIS, V.F., assistent; KOLABSKIY, N.A., dotsent; MITSKEVICH, V.Yu., dotsent; GUSEVA, N.V., dotsent; MYSHKIN, P.P., dotsent; GUBAREVICH, Ya.S., prof.; FEDOTOV, E.N., prof.; DOBIN, M.A., dotsent; SIROTKIN, V.A., prof. [deceased]; KUZ'MIN, V.V., prof.; YEVDOKIMOV, P.D., prof.; POLYAKOV, A.A., prof.; POLYAKOV, P.Ya., red.; BARANOVA, L.G., tekhn.red.

[Concise handbook for the veterinarian] Kratkii spravochnik veterinarnogo vracha. Leningrad, Gos.izd-vo sel'khoz.lit-ry, 1960. 624 p. (MIRA 13:12)

(Veterinary medicine)

2o-119-3-64/65

On the Interpretation of the Development Cycle of Elaphostrongylus rangiferi sp.nov. From the Reindeer

to the related kinds. There are 3 figures, and 3 references, 2 of which are Soviet.

ASSOCIATION: Leningradskiy institut usovershenstvovaniya veterinarnykh vrachey (Continuation Courses for Veterinary Surgeons, Leningrad)

PRESENTED: December 9, 1957 by K. I. Skryabin, Member, Academy of Sciences, USSR

SUBMITTED: December 9, 1957

AVAILABLE: Library of Congress

Card 3/3

On the Interpretation of the Development Cycle of Elaphostrongylus rangiferi sp.nov. From the Reindeer 20-119-3-64/65

logically change. When reindeers are fed with them, no invasion takes place, as an intermediate host is necessary for their further development. The experiments showed that the larvae can develop in the foot of different land and fresh water mollusks, Trichida hispida and Succinea putris (land mollusks) as well as kinds of Galba and Limnaea (fresh water mollusks) are the most likely ones to be invaded, the former to a much higher extent. Also the development in land mollusks takes place much faster. Agriolimax is not invaded. 2-5 months old reindeers were infected by larvae lying convoluted in the foot of snails. An infection by other intermediate hosts was eliminated. In all experiment animals larvae of the I. stage appeared in the feces after3-4 months. A reindeer calf, which had obtained 100 larvae per os, was autopsied. Under the pia mater and in the windings of the cerebral hemisphere 30 movable, hyaline, up to 50 mm long nematodes with rounded posterior end were ascertained. As this kind was recognized as a new one, it was described by the author from the beginning, as mentioned in the title. A description of the kind, of the male and female animal together with the larva, and finally a differential diagnosis is following which emphasizes the differences

Card 2/3

20-119-3-64/65

AUTHOR: Mitskevich, V. Yu.

TITLE: On the Interpretation of the Development Cycle of Elaphostrongylus rangiferi sp.nov. From the Reindeer (K rasshifrovke tsikla razvitiya nematody Elaphostrongylus rangiferi sp.nov. ot severnogo olenya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 3, pp. 621-624 (USSR)

ABSTRACT: In a mass investigation of reindeers in reindeer farms in different districts of the Sever (north) nematode larvae (Protostrongyliden) with a characteristical dorsum spine at the caudal extremity were ascertained in the feces of of 20-61% of the animals. They were classified into the family Elaphostrongylus the adult form of which, as known, occurs in red deer and maral. As there was no possibility of autopsy of reindeers from which the mentioned larvae came out, the author put himsself the task 1) to investigate the behavior of the larvae, 2) to ascertain the intermediate hosts and 3) to cause an infection of the reindeer by the invasion larva. The experiments showed that the larvae of stage I coming forth with the feces of reindeer are very capable of resistance and live outside up to 2 years although they do not grow during this time and do not morpho-

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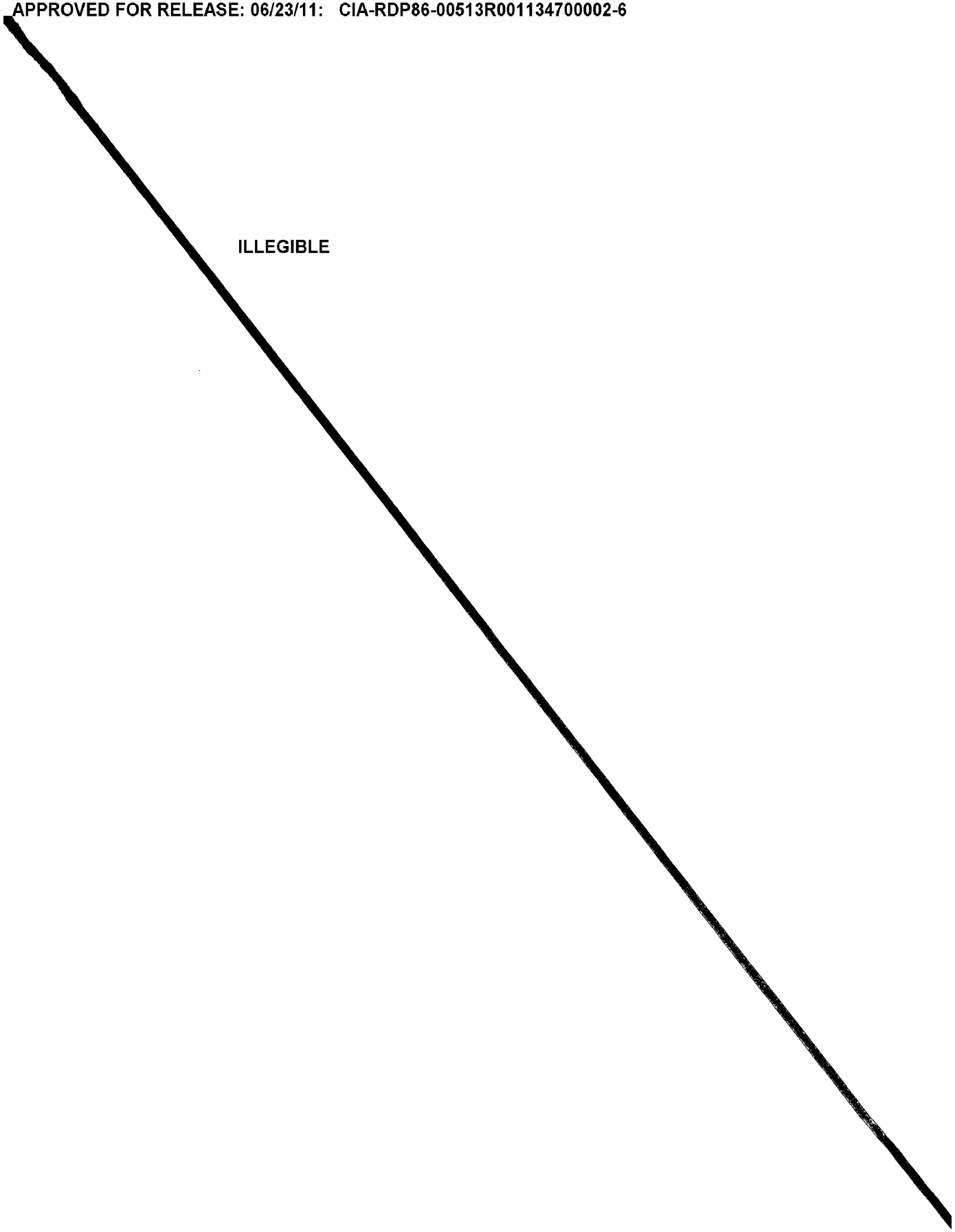

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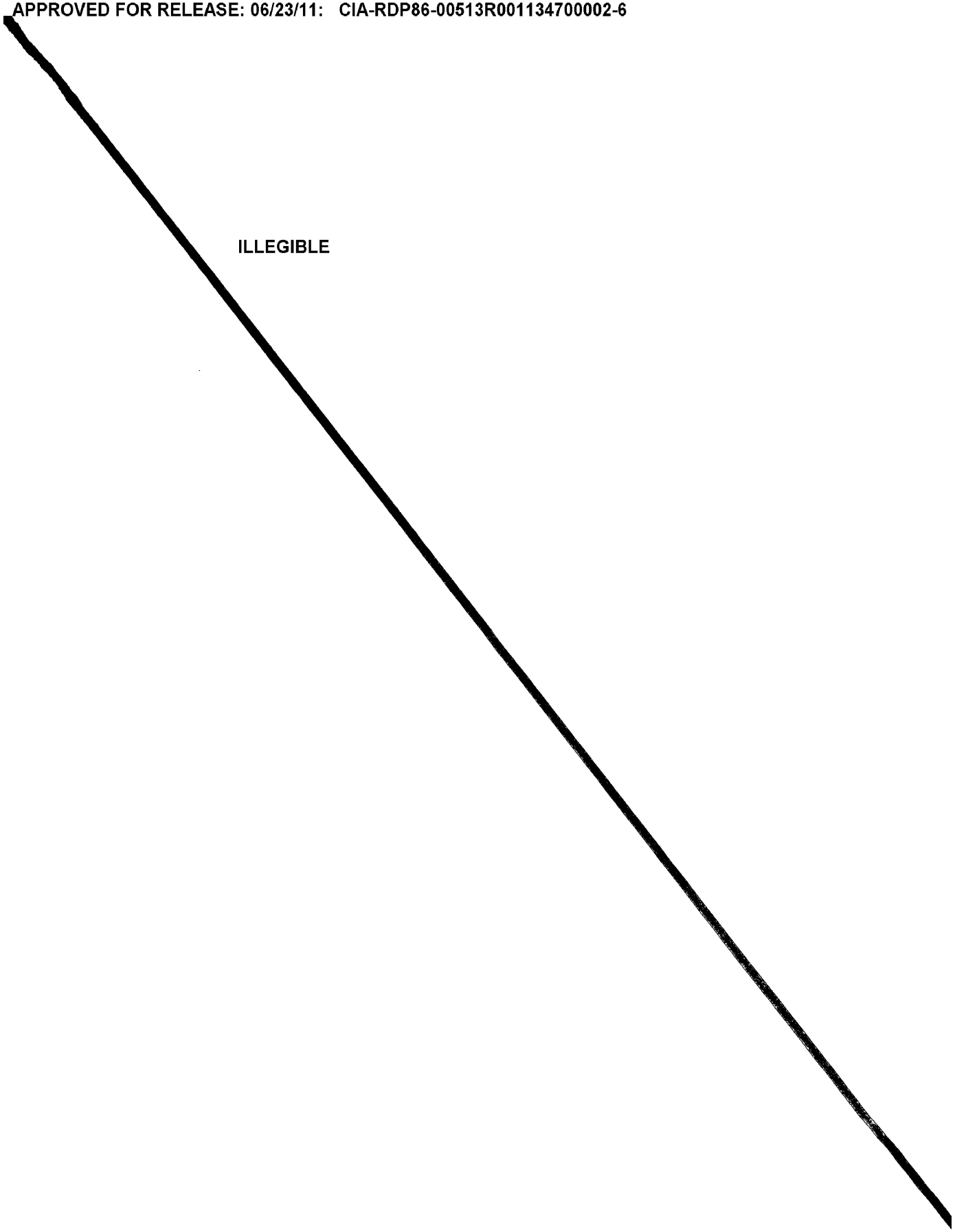

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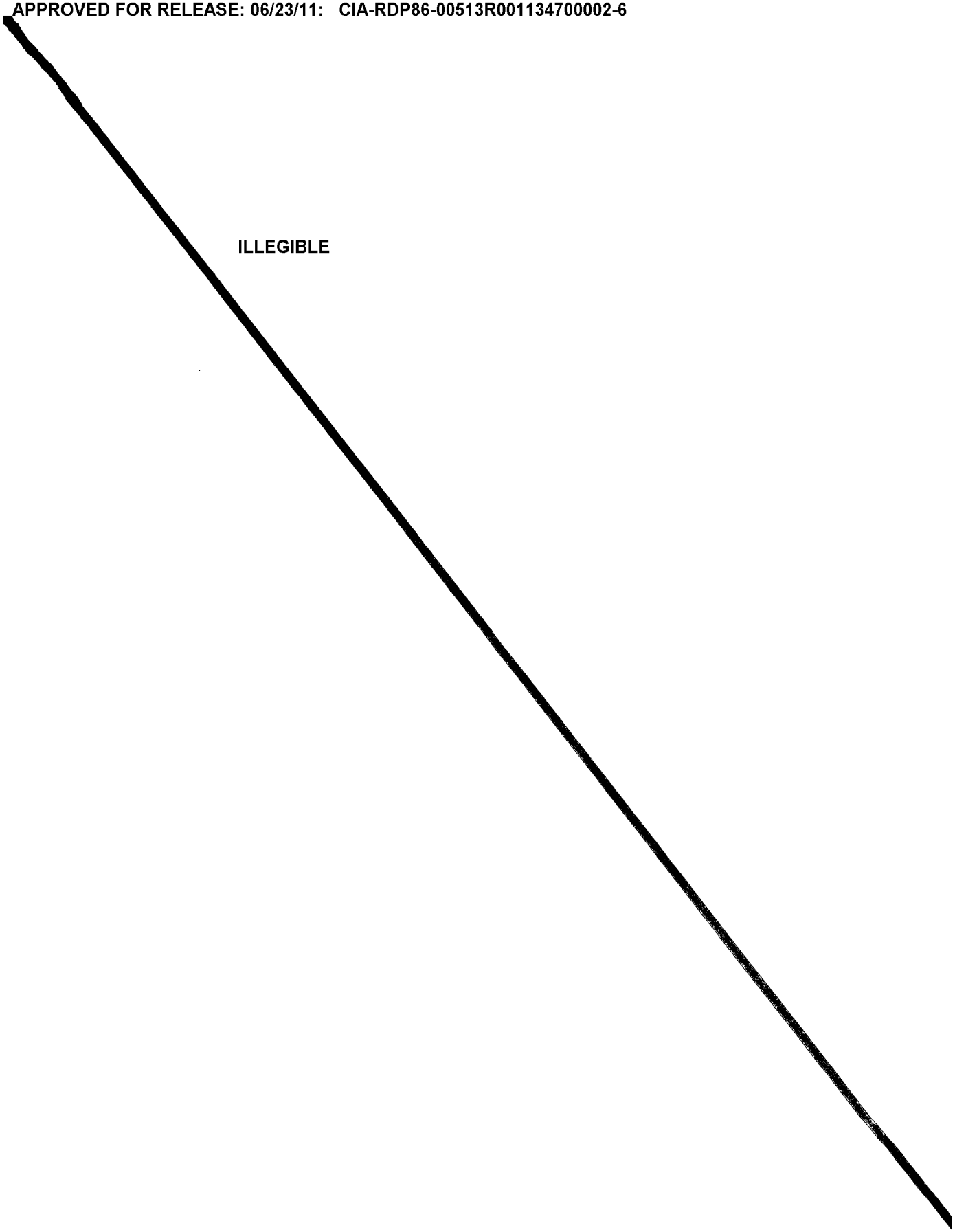

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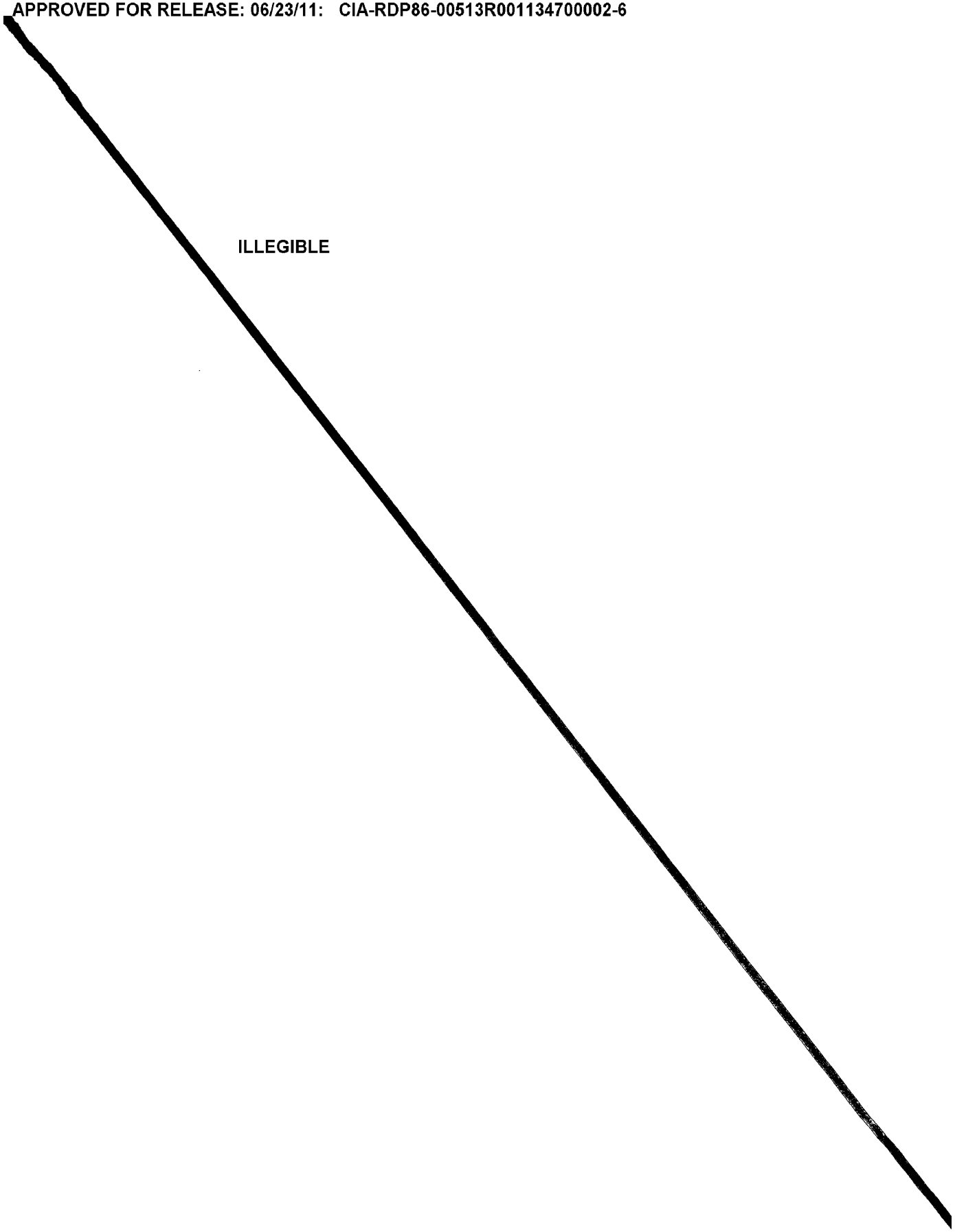
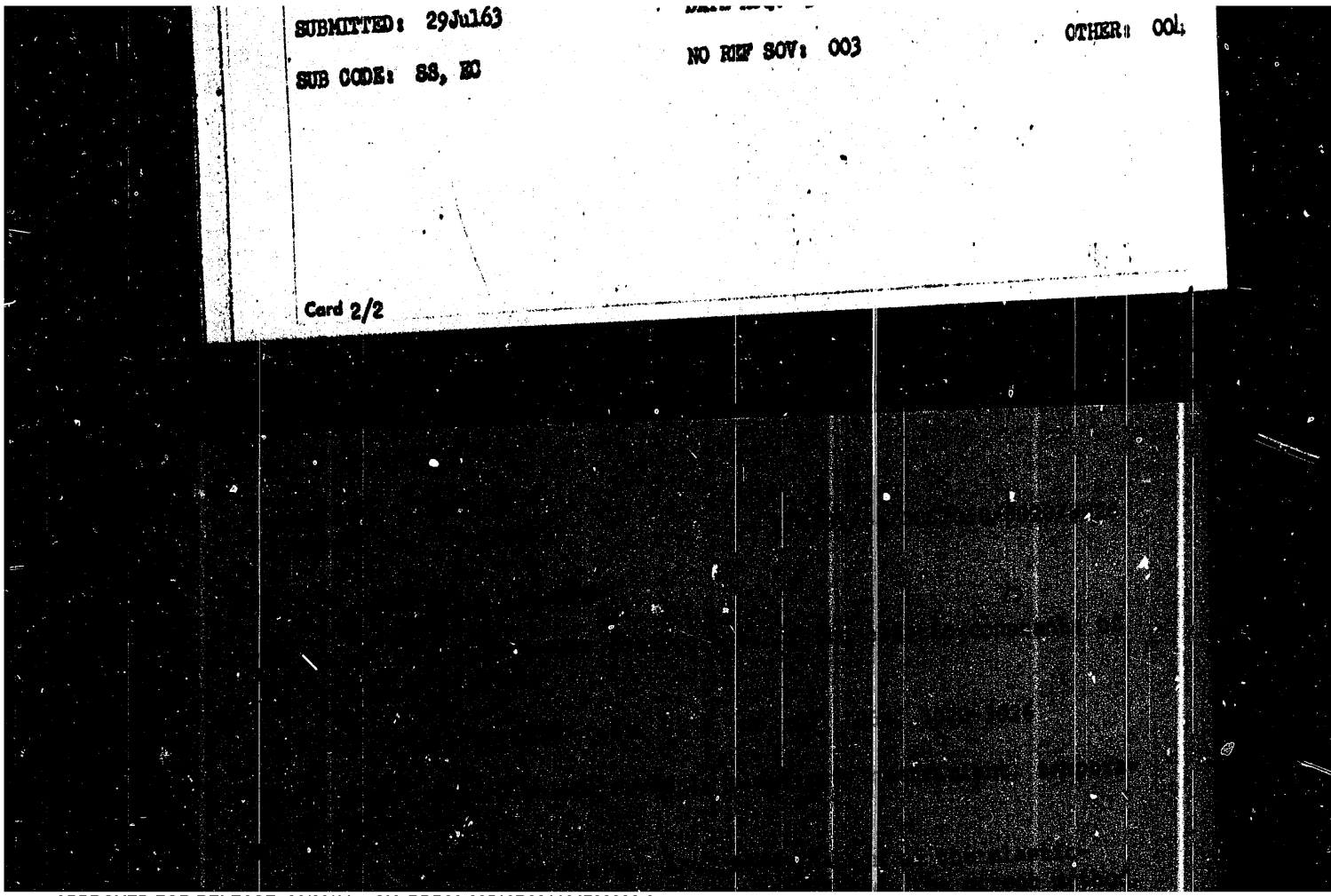




S/0181/64/006/003/0714/0721

ACCESSION NR: AP4019828

AUTHOR: Mitskevich, V. V.

TITLE: Deviation from additivity of polarization capacity and diamagnetic susceptibility in cubic ionic crystal

SOURCE: Fizika tverdogo tela, v. 6, no. 3, 1964, 714-721

TOPIC TAGS: ionic crystal, cubic crystal, diamagnetic susceptibility, additivity, polarisation capacity, electron polarisation

ABSTRACT: This is a continuation of the author's previous work (FTT, 5, 3500, 1963). He has restricted himself to binary crystals of the NaCl type and, in considering overlap of neighboring ions, has obtained expressions for electron polarization capacity and diamagnetic susceptibility of such a crystal. The expressions are very long and involved, but they indicate that additivity of polarisation capacity and susceptibility does not take place and that deviations are due both to the overlap of electron shells in underformed ions and to the overlap of deformed ions. The second is just as effective as the first. Parameters have been computed for LiF, NaF, KF, LiCl, NaCl, and KCl and are presented in a

Card 1/2

MITSKEVICH, V.V.

Effective ion charge in cubic ionic crystals. Fiz. tver. tela 5 no.12: 3500-3509 D '63. (MIRA 17:2)

1. Vil'nyusskiy gosudarstvennyy universitet imeni V.Kapsukasa.

L [illegible]
ACCESSION NR: [illegible]

The results obtained compare favorably with experimental data and are nearer these values than the computed results of other authors. The comparative values are tabulated. Orig. art. has: [illegible] 1 table and 59 formulas.

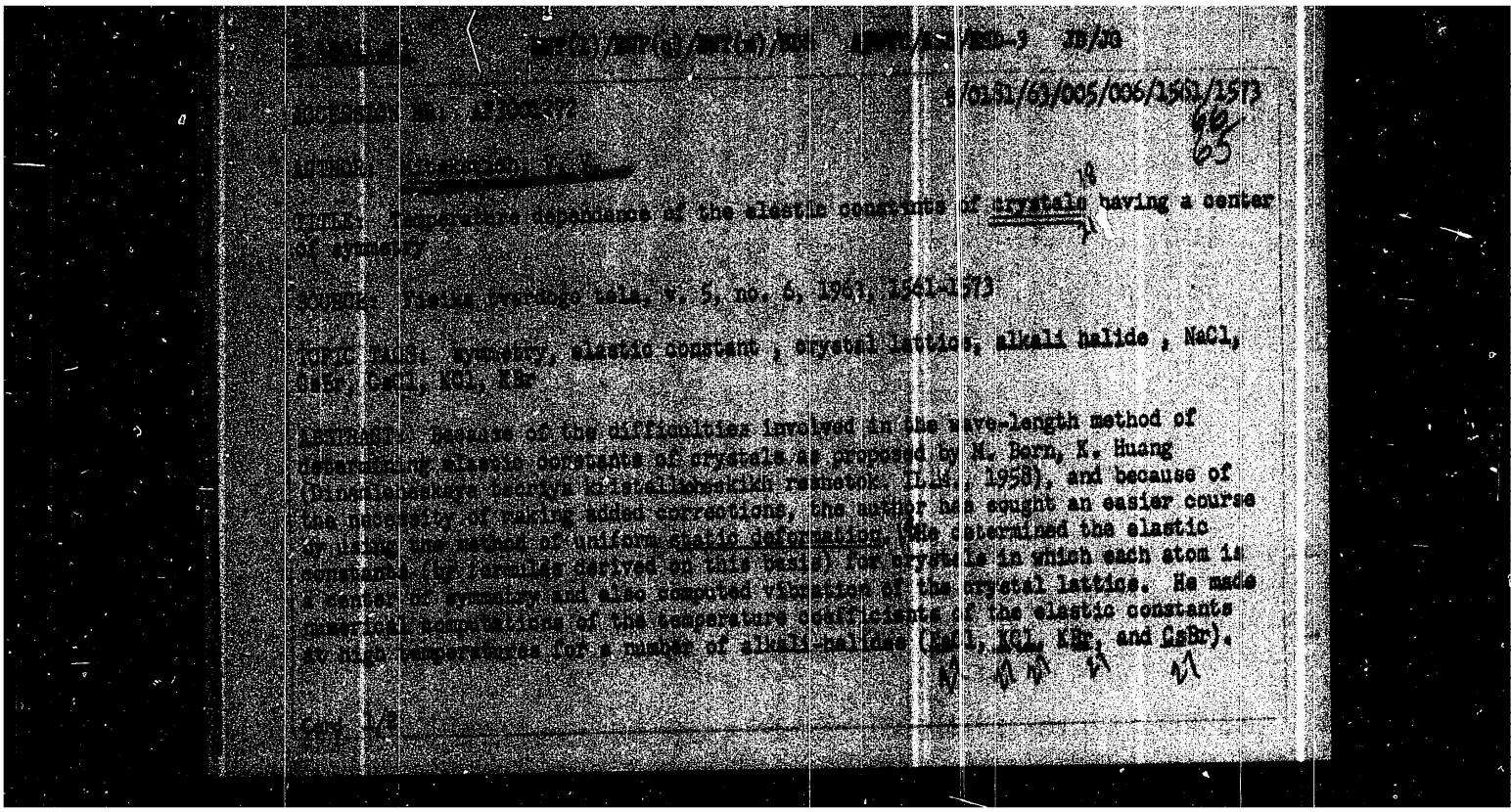
ASSOCIATION: Vil'nyusskiy gosudarstvennyy universitet im. V. Kapsukasa (Vilnius State University)

SUBMITTED: [illegible] DATE ACQ: 01Jul63 ENCL: 00

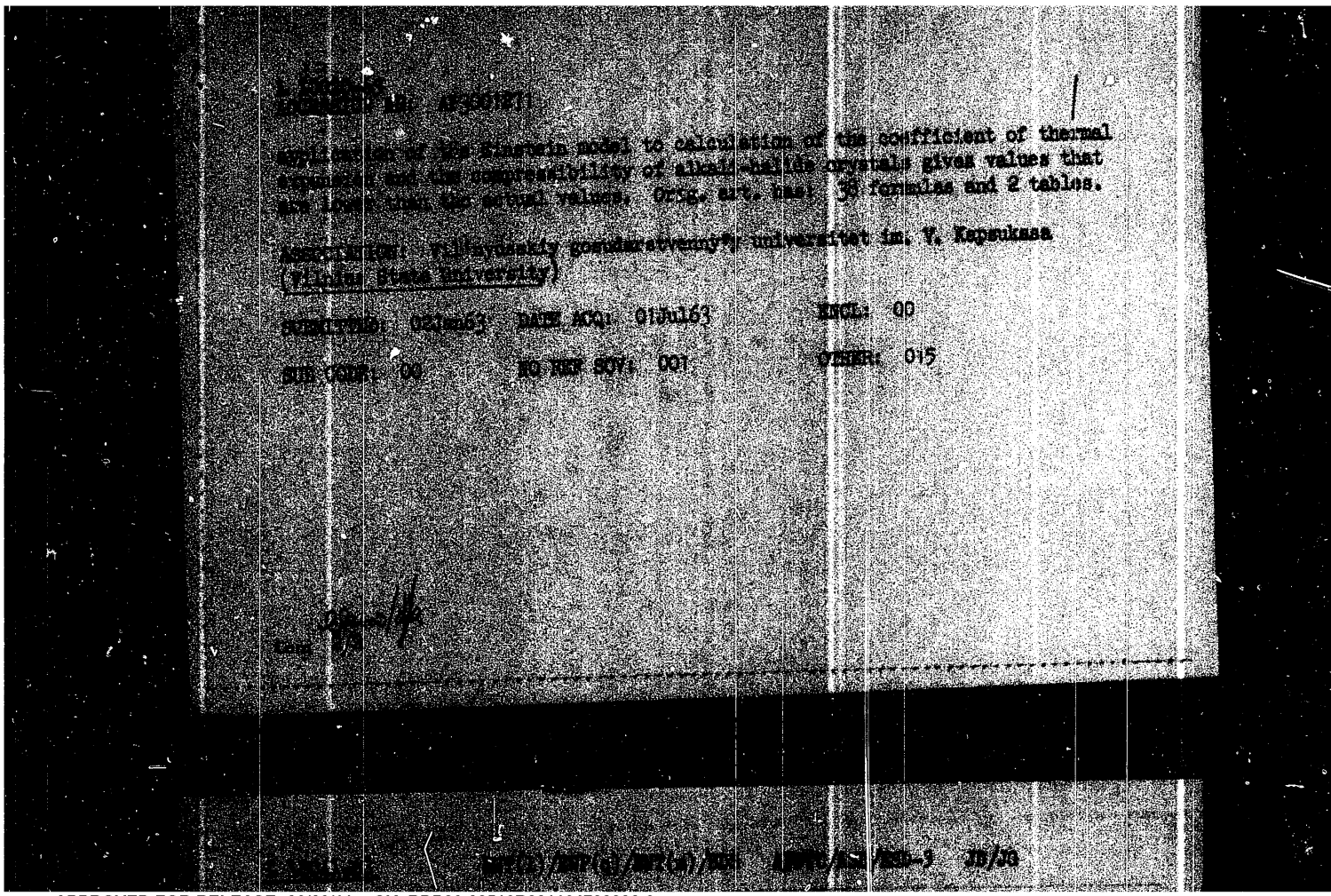
SUB CODE: PH NO SOV REF: 004 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700002-6



Card 1/2



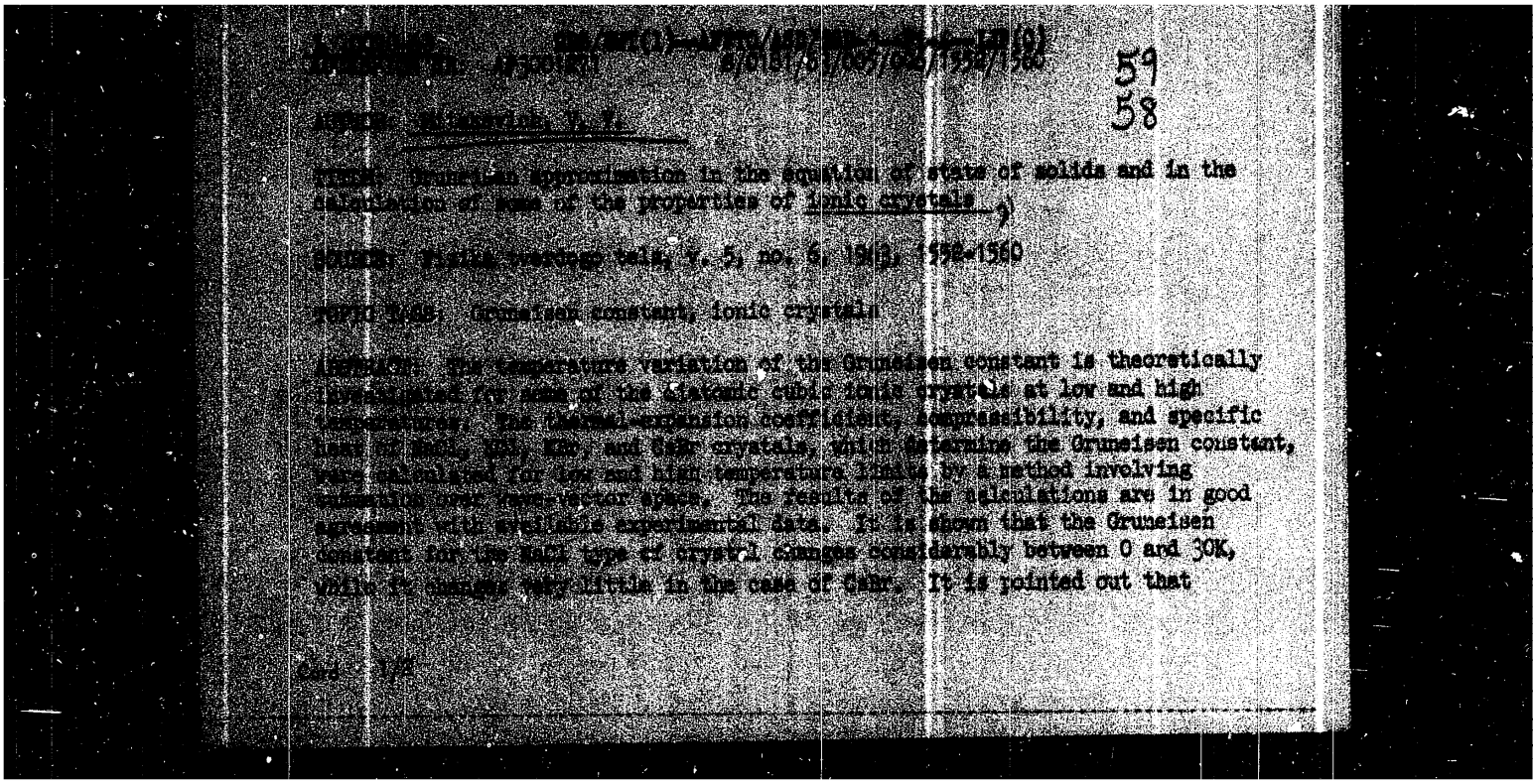
application of the Slaterin model to calculation of the coefficient of thermal expansion and the compressibility of alkali-halide crystals gives values that agree well with the actual values. Orig. art. has: 30 formulas and 2 tables.

ASSOCIATION: Yaroslavskiy gosudarstvennyy universitet im. P. Kepeshena (Yaroslavl State University)

SUBMITTED: 02Dec63 DATE ACQ: 01Jul64 ENCL: 00

SUB CODE: GP NO REF SOV: 001 OTHER: 015

Card 1/2



"On the effective charge of ions and the deviation from additivity of polarizability and diamagnetic susceptibility of ionic crystals."

International Conference on Lattice Dynamics, Copenhagen Denmark, 5-9 August 1963

The causes for the deviations partly observed are discussed and an appendix shows the components of the polarization vectors and the frequencies $\omega(\frac{k}{j})$ for 7 directions each of the wave vector. There are 10 figures and 6 tables.

ASSOCIATION: Vil'nyusskiy gosudarstvennyy universitet im. V. Kapsukasa (Vil'nyus State University imeni V. Kapsukas)

SUBMITTED: May 28, 1962

Legend to the Table: The quantities A, B, C, α, β and γ are given in CGS units.

	10^{-8} a, cm	10^{-12} χ_1, dyn^{-1}	$\frac{e^*}{e}$	$A \cdot 10^{10}$	$B \cdot 10^{10}$	$C \cdot 10^{2}$	α	β	γ
LiF . . .	1.99	1.4	0.79	$7.64a^3$	$1.64a^4$	$3.02a$	7.0	5.5	5.5
MgO . . .	2.10	0.63	1.1	$21.0a^3$	$9.17a^4$	$3.75a$	7.3	6.0	6.0

Card 4/4

Infrared absorption and ...

is valid, where μ is the reduced ion mass, ω_0 is the limiting frequency of transverse optical vibrations, the Φ and Ψ are complex functions given explicitly. Considering the higher electrical moments

$$\varepsilon''(\omega)=[\varepsilon_0(T)-\varepsilon_\infty(T)]\Omega_0^2\left\{\omega\gamma_3(\omega)\left(\frac{1}{\Omega_\omega^2-\omega^2}-\lambda_3\right)^2+\right.$$
$$\left.+\omega\gamma_4(\omega)\left(\frac{1}{\Omega_\omega^2-\omega^2}-\lambda_4\right)^2\right\}, \qquad (16)$$

$$\lambda_3=\frac{3e\mu\left[a\upsilon_2''-6A_{12}\right]}{ae^2(\varepsilon_\infty+2)\Phi_{3x}(a)}, \quad \lambda_4=\frac{3e\mu\left[a^2\upsilon_2'''(a)+24A_{12}\right]}{a^2e^2(\varepsilon_\infty+2)\Phi_{4x}(a)}, \qquad (17)$$

$A_{12}=(a_1+a_2)a^{-3}$.

is obtained for the imaginary part of the dielectric constant. Ω_ω and $\gamma(\omega)$ are the dispersion frequency and the damping constant. λ_3 and λ_4 are negative quantities. Finally, the theoretical frequency dependencies of the refractive index and of the extinction coefficient (k) are compared graphically with other authors' experimental results. This is done also for k(T).

Card 3/4

Infrared absorption and ...

$$\left.\begin{aligned} &\alpha_M \frac{e^2}{a^2} + 6u'(a) - \frac{6}{a} f'(a) + \frac{6}{a^2} f(a) = 0, \\ &\frac{1}{a} u''(a) - \frac{1}{a^2} f''(a) + \frac{2}{a^3} f'(a) - \frac{2}{a^4} f(a) - \alpha_M \frac{e^2}{3a^4} = 3\varkappa^{-1}, \\ &1 + 2v_2'(a) + \frac{4}{a} v_2(a) = \frac{e^*}{e}, \end{aligned}\right\} \quad (6)$$

with

$$u(r) = Ae^{-\alpha\left(\frac{r}{a}-1\right)}, \quad f(r) = Be^{-\beta\left(\frac{r}{a}-1\right)}, \quad v_2(r) = Ce^{-\gamma\left(\frac{r}{a}-1\right)} \quad (5).$$

Here and in the following f(r) stands for $2e^2\alpha_M f(r)$, where α_M is the Madelung constant, $\varkappa$ is the compressibility and a is the static lattice constant, e is the effective charge; the constants are tabulated. The moments of the frequency distribution are calculated by the formula

$$\mu_n = \frac{1}{6N} \sum_k \sum_j \omega_j^n \begin{pmatrix} k \\ j \end{pmatrix}$$

and are followed by calculations of expressions for the damping constants and the corrections to the dispersion frequency.

$$\gamma_3(\omega) = \frac{\pi}{\mu^2 \omega_0^4} \frac{kT}{3} \Phi_{3x}^2(a) \varphi_3(\omega), \quad (8)$$

$$\gamma_4(\omega) = \frac{\pi (kT)^2}{12\mu^4 \omega_0^6} \Phi_{4x}^2(a) \varphi_4(\omega), \quad (12)$$

Card 2/4

43110

S/181/62/004/011/005/049
B102/B104

24 3950

AUTHOR: Mitskevich, V. V.

TITLE: Infrared absorption and dispersion in LiF and MgO

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3035 - 3047

TEXT: The author had previously studied the frequency dependence of the optical parameters of NaCl, and how they are affected by changes in temperature, considering anharmonic terms of the third and fourth order of the potential energy of the crystal (FTT, 3, 3022, 1961. Litovskiy fizicheskiy sb. 1, No. 3-4, 1961). Now he makes analogous calculations for LiF and MgO and considers the effect on absorption, including higher electrical moments of the crystal. First, details are given as to frequency spectra and vibration amplitudes. The following relations are obtained for the parameters involved in the theory:

Card 1/4 NOT ABSTRACTED

ACCESSION NR: AR3010529

tion due to the overlap of the electron shells, account is taken also of the Van der Waals energy, the interaction of dipole moments of the deformed electron shells, and the charge-quadrupole interaction. The contribution of the charge-quadrupole interaction to the elastic constants turns out to be appreciable. Their temperature dependence is determined in the Gruneisen model. The theoretical results are in qualitative agreement with the experimental ones. The optical properties in the infrared region are also calculated. The fine structure of the spectrum should be observed at wavelengths 21, 40, 49, and 67 microns. The satisfactory agreement between the calculations and the available experimental data indicates that the use of the strongly-bound electron approximation is acceptable for the NaCl crystal. V. Oskotskiy

DATE ACQ: 14Oct63 SUB CODE: PH ENCL: 00

Card 2/2

ACCESSION NR: AR3010529 S/0058/63/000/009/E048/E048

SOURCE: RZh. Fizika, Abs. 9E383

AUTHOR: Mitskevich, V. V.

TITLE: Theory of ionic crystals of the NaCl type with account of the crystal lattice vibrations

CITED SOURCE: Sb. Fiz. shchelochnogaloidn. kristallov. Riga, 1962, 62-68

TOPIC TAGS: ionic crystals, NaCl, theoretical temperature dependence, electron shell overlap, charge-quadrupole interaction, dipole moment interaction

TRANSLATION: The temperature dependence of the properties of the NaCl crystal is calculated on the basis of the general theory of Born and Huang. In addition to the Coulomb and short-range interac-

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MITSKEVICH, V.V.

Dynamic theory of ionic crystals of the NaCl type; dielectric and optical properties. Fiz.tver.tela 3 no.10:3036-3045 O '61. (MIRA 14:10)

1. Vil'nyusskiy gosudarstvennyy universitet imeni V.Kapsukasa.
(Ionic crystals) (Lattice crystals)

MITSKEVICH, V.V.

Dynamic theory of ionic crystals of the NaCl type; thermal and elastic properties. Fiz.tver.tela 3 no.10:3022-3035 O '61. (MIRA 14:10)

1. Vil'nyusskiy gosudarstvennyy universitet imeni V.Kapsukasa.
(Ionic crystals) (Lattice theory)

S/139/60/000/004/035/044/XX
E201/E491

A Theory of the Effect of Damping in Ionic Crystals

and the absorption maximum decreased linearly with increase of the reciprocal of temperature. The paper is entirely theoretical. There are 6 references: 1 Soviet, 3 German, 1 Dutch and 1 translation from English into Russian.

ASSOCIATION: Vil'nyusskiy gosuniversitet imeni V.Kapsukasa
(Vil'nyus State University imeni V.Kapsukas)

SUBMITTED: April 21, 1959

Card 2/2

S/139/60/000/004/035/044/XX
E201/E491

AUTHOR: Mitskevich, V.V.

TITLE: A Theory of the Effect of Damping in Ionic Crystals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.4, pp.6-12

TEXT: A quantum-mechanical treatment of the effect of radiation damping in an isolated atom was given by Weisskopf and Wigner (Ref.1). This method was applied by Born and Huang Kun to infrared dispersion in ionic crystals (Ref.2). A direct application of the Weisskopf-Wigner treatment to crystals led to considerable difficulties. Some of these difficulties are avoided by the use of density matrices. Such matrices were employed by the author to deal with interaction of light with ionic crystals, allowing for anharmonicity of lattice vibrations which is responsible for damping. The anharmonic potential and interaction of light with ionic crystals were regarded as a perturbation, and the radiation field was assumed to be very small. The temperature dependence of the parameters of an absorption line was studied. It was found that at high temperatures the "wings" of the line increased in proportion to temperature rise,

Card 1/2

MENZHERITSKIY, A.I.; OSIPOV, A.V.; YEFREMOV, M.D.; KRUKOVSKIY, Ye.V.; SHLUGER, N.A.; REPSHIL', A.P.; MITSKEVICH, V.M.; MIKIRTUCHEVA, Z.V.; POLONSKIY, V.V.; OBOTOVA, M.N.; SEMENOVSKIY, A.A.; GARASEVICH, G.I.; VAYNBERG, Ye.I.; DOMNICH, A.M.; LEVCHENKO, V.L.; RAFAL'SON, V.D.; ROMANENKO, Ye.I.; SHPINER, Ye.I.; TEKLIN, V.G.

Innovations. Bum. i der. prom. no.2:58 Ap-Je '65.
(MIRA 18:6)

MITSKEVICH, V.M., insh.; SHISHOV, Ye.L., insh.

Adhesion of grouting mortars and concretes with linings and rock walls in shafts. Ugol' Ukr. 5 no.1:28-31 Ja '61.
(MIRA 14:1)

(Shaft sinking)

GORDEYEV, A.S., prof. doktor tekhn. nauk; YUSHKO, V.I., kand. tekhn. nauk; MITSKEVICH, V.G., inzh.

Modeling of the switching process in the reversing gear of hydraulic drives of diesel locomotives. Trudy MIIT no.195: 156-164 '64. (MIRA 18:9)

ACC NR: AP7005735

from 17 to 38C. For the liquid state, the interval extends to 10^4 v/cm when the temperature is 80C above the melting point. No changes were observed in the thermal activation energy for both solid and liquid phases, or in the discontinuity of the conductivity at fusion. In the region where the interrelationship deviates from Ohm's law, the thermal energy of the activation of conductivity diminishes with the growth of field intensity, especially for the solid phase. For solid beta-methylnaphtalene, for example, the activation energy drops from 3.12 to 1.71 ev when field intensity increases from 10^3 to 10^4 v/cm, while no change of activation energy was observed for the liquid state under the same conditions. The latter is explained by the high equilibrium concentration of current carriers resulting from the exciton decay, which, in turn, is caused by the increasing number of reorienting molecules in the heated medium. Orig. art. has: 2 figures. [FP]

SUB CODE: 20/ SUBM DATE: none/ ATD PRESS: 5115

Card 2/2

ACC NR: AP7005735 SOURCE CODE: UR/0139/66/000/006/0125/0127

AUTHOR: Bashmakova, M. I.; Mitskevich, P. K.

ORG: Dnepropetrovsk Institute of Civil Engineering (Dnepropetrovskiy inzhenerno-stroitel'nyy institut)

TITLE: The effect of electric field on the electroconductivity of solid and liquid organic semiconductors

SOURCE: IVUZ. Fizika, no. 6, 1966, 125-127

TOPIC TAGS: solid semiconductor, organic semiconductor, naphtalene, ~~semiconductor~~, semiconductor conductivity, liquid semiconductor, ~~liquid semiconductor conductivity~~ electric conduction, electric field, current carrier

ABSTRACT: The article summarizes experimental results obtained earlier by the authors and other investigators on the electroconductivity of certain naphtalenes in their solid and liquid phases. The experiments were conducted with 2-mm-thick specimens at field intensities up to 30,000 v. The current-voltage characteristics for naphtalene and beta-methylnaphtalene in general displayed a linear interdependence, with little difference between the solid and liquid phase. A straight linearity was observed at field intensities of 2×10^3—4×10^3 v/cm for the solid phase and 10^4 v/cm for the liquid state. This linearity was also maintained at different temperatures, although the limit of validity of Ohm's law was reduced from 7×10^3 to 1.5×10^3 v/cm with a change in temperature

Card 1/2 UDC: none

L 40343-66

ACC NR: AP6018983

of intramolecular hydrogen bonds, which weaken the intermolecular interaction. Orig. art. has: 2 figures and 1 table.

SUB CODE: 20/ 07/ SUBM DATE: 31Mar65/ ORIG REF: 011/ OTH REF: 002

Card 2/2

L 40343-66 EWP(j)/EWT(m) RM/RH

ACC NR: AP6018983 SOURCE CODE: UR/0364/66/002/006/0700/0703

AUTHOR: Bashmakova, M. I.; Mitskevich, P. K.

ORG: Dnepropetrovsk Engineering and Construction Institute (Dnepropetrovskiy inzhenerno-stroitel'nyy institut)

TITLE: Electrical conductivity and intermolecular interaction in organic compounds

SOURCE: Elektrokhimiya, v. 2, no. 6, 1966, 700-703

TOPIC TAGS: electric conductivity, intermolecular force, naphthalene, organic azo compound

ABSTRACT: Data on the relationship between the structure of naphthalene derivatives (α-naphthol, β-naphthol, β-methylnaphthalene) and organic azo dyes of the naphthalene series and their electric properties were obtained by studying their optical absorption spectra, recorded in benzene solutions with an SF-4 spectrophotometer. The electron donor properties of OH and CH_3 groups introduced into the aromatic molecule were thus established. Comparison of the activation energy ϵ_t and melting point showed that a change in the forces of intermolecular interaction does not affect ϵ_t. The fact that the values of ϵ_t correspond to the long wave edge of the absorption spectrum suggests a decisive role of the intermolecular structure. The high electrical conductivity of heterocyclic aromatic compounds and monosubstituted naphthalenes is explained in terms of the lowering of intermolecular barriers as a result of dipole polarization and intermolecular hydrogen bonds. The low conductivity of azo dyes results from the formation

Card 1/2 UDC: 621.315.592:547

MITSKEVICH, P.K.; SOLODOVNICHENKO, I.M.; SIGAREV, M.T.

Certain features of the behavior of ethyl ether in nonuniform electric fields. Elektrokhimiia 1 no.9:1072-1076 S '65.
(MIRA 18:10)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.